



Kopex-Ex[®] ISR[™] Fittings

Meet 100% of cable pull-out requirements with no need for external clamping

Thomas & Betts is proud to introduce the next generation of globally-certified industrial strain-relief fittings:

Kopex-Ex[®] ISR[™] Fittings

The latest in Thomas & Betts' long line of renowned industrial cable termination products, the **Kopex-Ex[®] ISR[™]** fitting was developed in Canada with input from end users in the oil and gas industry. This is a high-level solution for industrial end users looking for a superior quality fitting that reduces installation time and costs while surpassing global standards for pull-out requirements.

The majority of strain-relief fittings on the market today are designed to meet 25% of the IEC pull-out requirement for surface applications and, as per IEC standard 60079, require that the installer provide additional clamping as close as possible to the point at which cables exit the enclosure to ensure that pulling and twisting is not transferred to the terminations. The external clamping requirement adds time, complexity and cost to the installation process. In the event that additional clamping is not provided, the integrity of electrical systems as well as compliance with IEC standards are compromised.

With its unique design and integral clamping mechanism, the new **Kopex-Ex[®] ISR[™]** fitting allows you to meet 100% of IEC cable pull-out requirements with no external clamping, reducing installation time, complexity and costs.

Developed for the drill rig industry,
with input from the drill rig industry.

Thomas & Betts

A Member of the ABB Group






Kopex-Ex[®] ISR[™] fittings

The new design standard for high-performance industrial strain-relief fittings


TEMPERATURE RANGE	CERTIFICATIONS and STANDARDS		CERTIFICATES
-50°C to 110°C	Class/Zones system Ex e IIC Gb Ex ta IIIC Da IP66	Class/Divisions system CLI Div2 ABCD CLII Div1 EFG CLIII Div1 Type 4X	CSA 14.70009467X • IECEx CSA 14.0035X • SIRA 14ATEX3238X UL E328651 and E311979




Class I, Zone 1, 2 / Class II, Zone 20, 21, 22

					Ex e IIC Gb	Ex ta IIIC Da	IP66
Certifications					Gas Protection "Increased Safety" Where arcs and sparks don't normally occur IIC: Acetylene, hydrogen and all other gases	Dust Atmospheres IIIC: Conductive and other types of dusts	Ingress Protection Dust-tight and powerful water jets

Class I Division 2 and Class II, III Division 1

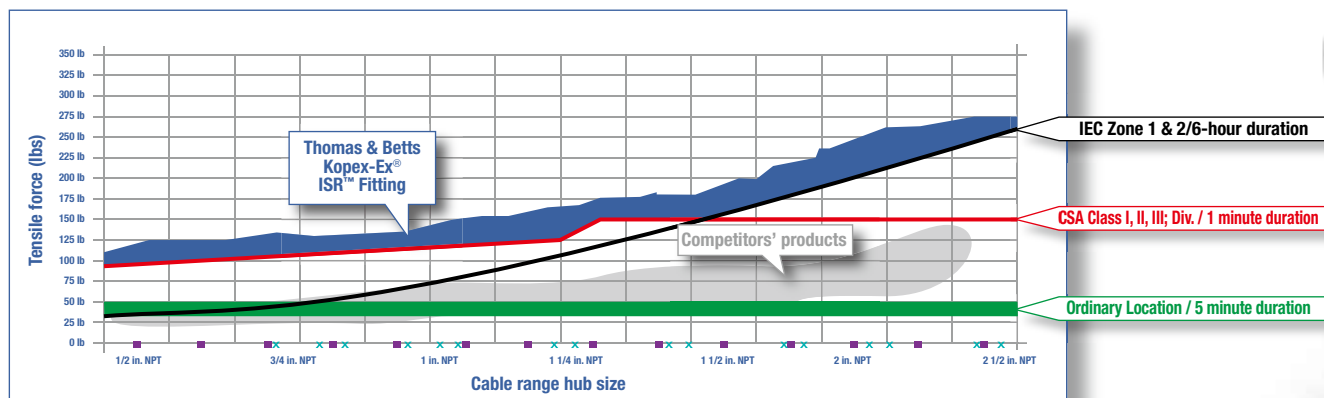
	CLI	DIV2	ABCD	CLII	DIV1	EFG	CLIII	DIV1	TYPE 4X
Certification	Gas and vapours protection A: Acetylene B: Hydrogen C: Ethylene D: Propane and methane			Dust protection E: Metal F: Coal G: Flour, grain		Fibers and flyings protection	Environmental protection from dust and water Corrosion resistant		

Class I, Zone 1, 2, 20, 21, 22 / Class I, II, III Division 2

	Class I	Zone 1	AEx e IIC	Zone 20	AEx ta
Certification	Gas Protection "Increased Safety" Where arcs and sparks don't normally occur IIC: Acetylene, hydrogen and all other gases			Dust Atmospheres IIIC: Conductive and other types of dusts	

Kopex-Ex[®] ISR[™] fittings

Superior 100% pull-out performance with no external clamping



Tensile force vs. cable range hub size

The new Kopex-Ex[®] ISR[™] fitting consistently exceeds IEC standards for 100% pull-out resistance with no external cable clamping.

Ordering information

NPT

CAT. NO.	HUB SIZE A (THREAD)	TORQUE	THROAT DIA.	CABLE DIAMETER (Range over jacket)		B (REF.) [†]	C (O.D.)
				MIN. DIA.	MAX. DIA.		
ISR050-053	1/2" NPT	400 lbf-in (45.19 Nm)	0.535 in. (13.59 mm)	0.325 in. (8.25 mm)	0.525 in. (13.34 mm)	1.65 in. (41.91 mm)	1.350 in. (34.29 mm)
ISR050-062	1/2" NPT		0.630 in. (16.00 mm)	0.425 in. (10.79 mm)	0.620 in. (15.75 mm)	1.683 in. (42.75 mm)	1.500 in. (38.10 mm)
ISR075-062	3/4" NPT	600 lbf-in (67.79 Nm)	0.630 in. (16.00 mm)	0.425 in. (10.79 mm)	0.620 in. (15.75 mm)	1.683 in. (42.75 mm)	1.625 in. (41.28 mm)
ISR075-082	3/4" NPT		0.825 in. (20.96 mm)	0.585 in. (14.86 mm)	0.815 in. (20.70 mm)	1.790 in. (45.47 mm)	1.700 in. (43.18 mm)
ISR100-102	1" NPT	800 lbf-in (90.39 Nm)	1.035 in. (26.29 mm)	0.785 in. (19.94 mm)	1.025 in. (26.04 mm)	1.818 in. (46.18 mm)	1.900 in. (48.26 mm)
ISR125-122	1-1/4" NPT	1100 lbf-in (124.28 Nm)	1.225 in. (31.12 mm)	0.985 in. (25.02 mm)	1.215 in. (30.86 mm)	1.993 in. (50.62 mm)	2.320 in. (58.93 mm)
ISR125-137	1-1/4" NPT		1.380 in. (35.05 mm)	1.185 in. (30.10 mm)	1.370 in. (34.80 mm)	1.918 in. (48.72 mm)	2.320 in. (58.93 mm)
ISR150-156	1-1/2" NPT	1300 lbf-in (146.88 Nm)	1.560 in. (39.62 mm)	1.335 in. (33.91 mm)	1.550 in. (39.37 mm)	1.945 in. (49.40 mm)	2.580 in. (65.53 mm)
ISR200-179	2" NPT	1600 lbf-in (180.77 Nm)	1.795 in. (45.59 mm)	1.525 in. (38.73 mm)	1.785 in. (45.34 mm)	2.017 in. (51.23 mm)	3.012 in. (76.50 mm)
ISR200-206	2" NPT		2.070 in. (52.58 mm)	1.755 in. (44.58 mm)	2.055 in. (52.20 mm)	2.010 in. (51.05 mm)	3.200 in. (81.28 mm)

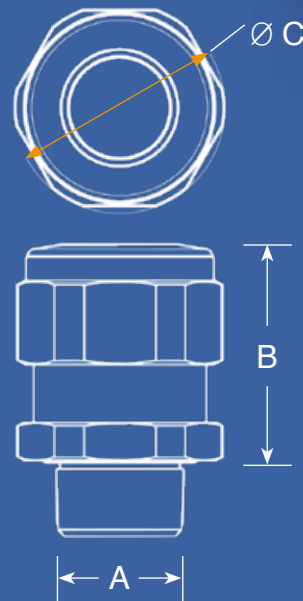
[†] Reference dimension before installation.

To order the ISR in stainless steel 316L, add suffix "SS" to catalogue number. Contact your local T&B representative for availability and pricing.

METRIC

CAT. NO.	HUB SIZE A (THREAD)	TORQUE	THROAT DIA.	MIN. DIA.	MAX. DIA.	B (REF.) [†]	C (O.D.)
ISRM20-13	M20	45.19 Nm (400 lbf-in)	13.59 mm (0.535 in.)	8.25 mm (0.325 in.)	13.34 mm (0.525 in.)	41.91 mm (1.650 in.)	34.29 mm (1.350 in.)
ISRM20-15	M20		15.24 mm (0.600 in.)	10.79 mm (0.425 in.)	15.00 mm (0.590 in.)	42.75 mm (1.683 in.)	38.10 mm (1.500 in.)
ISRM25-15	M25	67.79 Nm (600 lbf-in)	16.00 mm (0.630 in.)	10.79 mm (0.425 in.)	15.75 mm (0.620 in.)	42.75 mm (1.683 in.)	41.28 mm (1.625 in.)
ISRM25-20	M25		20.32 mm (0.800 in.)	14.86 mm (0.585 in.)	20.07 mm (0.790 in.)	45.47 mm (1.790 in.)	43.18 mm (1.700 in.)
ISRM32-26	M32	90.39 Nm (800 lbf-in)	26.29 mm (1.035 in.)	19.94 mm (0.785 in.)	26.04 mm (1.025 in.)	46.18 mm (1.818 in.)	48.26 mm (1.900 in.)
ISRM40-31	M40	124.28 Nm (1100 lbf-in)	31.12 mm (1.225 in.)	25.02 mm (0.985 in.)	30.86 mm (1.215 in.)	50.62 mm (1.993 in.)	58.93 mm (2.320 in.)
ISRM40-35	M40		35.05 mm (1.380 in.)	30.10 mm (1.185 in.)	34.80 mm (1.370 in.)	48.72 mm (1.918 in.)	58.93 mm (2.320 in.)
ISRM50-39	M50	146.88 Nm (1300 lbf-in)	39.62 mm (1.560 in.)	33.91 mm (1.335 in.)	39.37 mm (1.550 in.)	49.40 mm (1.945 in.)	65.53 mm (2.580 in.)
ISRM63-45	M63	180.77 Nm (1600 lbf-in)	45.59 mm (1.795 in.)	38.73 mm (1.525 in.)	45.34 mm (1.785 in.)	51.23 mm (2.017 in.)	81.28 mm (3.200 in.)
ISRM63-52	M63		52.58 mm (2.070 in.)	44.58 mm (1.755 in.)	52.20 mm (2.055 in.)	51.05 mm (2.010 in.)	81.28 mm (3.200 in.)

The metric version of the ISR is not UL listed.



Applications

Tray Cable

Complies with IEC requirements when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, Kopex-Ex[®] ISR[™] fittings must be used in combination with a certified Class I hazardous location sealing fitting. **N.B.:** Tray cable is not suitable for use in Zone 1 locations.

Portable Cord

Complies with IEC requirements when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, Kopex-Ex[®] ISR[™] fittings must be used in combination with a certified Class I hazardous location sealing fitting. **N.B.:** Portable cord can be used in Zone 1 applications only when installed on portable equipment.

Utilization

For use with unarmoured cable types suitable for use in Class I, Zone 1 (e.g. extra-hard usage cord). When used with tray cables, Series ISR[™] cable glands are suitable to be installed in Class I, Zone 2 / Div. 2 classified hazardous location area according to CEC/NEC wiring method, or subject to local inspection authority having jurisdiction.

NEC or USA Requirements

For installations in accordance with the NEC in Class I Zone 1, the ISR[™] fitting can be used only with listed extra-hard usage cord or listed TC-ER-HL cable having a diameter up to and including 1 inch. Additionally, for Zone 20 applications, only extra-hard usage cord can be used. Refer to NEC wiring methods for additional details and local inspection authority for more information.





Gland Nut

- Distinctive domed profile
- High-strength, corrosion-resistant copper-free aluminum construction (less than 0.4%)
- Heavy-duty, wide hex design for ease of installation
- Smooth, snag-free contour design prevents injury and sheds water
- Laser-etched certification markings are visible no matter where it is installed

Chuck Ring

- Fiber-reinforced nylon construction and unique over-molded design provide both strength and flexibility
- Acts as a built-in clamp - superior 100% pull-out performance eliminating need for external clamping
- Jaws grasp cable jacket over a large surface preventing damage and tearing
- Flexible TPE belt positions the chucks radially, allowing uniform cable engagement

Sealing Bushing

- High-tech silicon polymer performs in extreme temperature conditions (-50°C to +110°C)
- Wide surface of engagement provides dependable seal against dust and liquids
- Excellent engagement even on irregular cable shapes

Body

- High-strength, corrosion-resistant copper-free aluminum construction (less than 0.4%)
- Small turning radius allows close spacing of fittings
- Fine thread for easy tightening; ample anti-seizing grease prevents “cold-welding” to gland nut threads
- Anti-rotation splines prevent cable and bushings from twisting and deforming during tightening
- Biting, box-side teeth ensure electrical ground with enclosure and allow draining of trapped moisture to prevent corrosion
- O-ring seated in a recessed shoulder prevents over-compression of sealing bushing

Interface Sealing O-Ring

- Wide and flexible – adapts easily to variations in knockout dimensions
- Wide sealing footprint to prevent moisture and dust from migrating into enclosure

Uniquely-designed chuck ring acts as a built-in clamp, eliminating the need for external clamping while ensuring compliance with IEC pull-out standards.



Kopex-Ex® ISR™ Fittings

Competition
25% pull-out
resistance

External
clamping
required



Kopex-Ex®
ISR™ Fitting

100% pull-out
resistance
No external clamping
required

Kopex-Ex[®] ISR[™] Fittings

from Thomas & Betts

With a variety of manufacturers to choose from, engineers, end users and installers often see Thomas & Betts as the logical first choice for a variety of reasons:

- Preferred supplier to the Canadian electrical industry for close to a century
- A wide range of ever-evolving quality products and superior solutions customized to meet application-specific challenges
- An established company invested and committed to helping engineers, contractors and end users reduce costs while increasing performance and safety
- Canadian-based sales and marketing, customer service and logistics
- 80% of products sold in Canada are manufactured in Canada

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